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How can the object which no longer exists *be* my undeniably present and actual perception? I can understand (thanks to the reiterations of my new realist friends) how a given object A can be in two groups. I can not as yet comprehend how an existent object can be numerically identical with one that no longer exists.

This last sentence expresses the essence of the argument which the dualist finds in the facts of error and illusion. And he is therefore astonished when he meets with attempts on the part of pan-objectivists to fit these recalcitrant facts into their system by means of long and elaborate explanations of the physical and physiological *causes* of these errors. Doubtless the double image which one gets by pressing one eye-ball is to be accounted for on strictly physical lines; yet that does not make it the less true that there is admittedly but one object and that there are demonstrably two images, and that the two images can not *be* identically the one object. One may, of course, take refuge in the assertion that the two images are to be identified with the light waves *from* the object or with the resulting brain processes; but quite aside from the very dubious nature of such an identification—an identification which in the end will prove to be utterly meaningless—it is plain that to have recourse to this position is to abandon the central thesis of the new realism, namely, the identification of the common object in the common space with the individual's percept of it.

Be it noted now, in conclusion, how all these difficulties, as yet certainly quite unsurmounted by pan-objectivism, vanish at once if we take the simple and natural position of dualism. To insist that dualism can not be accepted because inferential knowledge and transcendence seem a bit hard to understand, and then to adopt in its place a theory so bristling with irreconcilable characteristics as I think I have shown pan-objectivism to be, would suggest forcibly the interesting performance of straining at the gnat and swallowing the camel. To me, at least, this newer view which I have been criticizing seems quite as uncalled for and gratuitous as it is unquestionably ingenious and original.

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THE DISTINCTION BETWEEN THE MENTAL AND THE PHYSICAL¹

THE following considerations can make no claim as a contribution to a baffling subject. My philosophic studies have been somewhat restricted to the logic of mathematical physics and applied ethics, and on epistemologic problems I can speak only with an inno-

¹ Read before the American Philosophical Association, December 27, 1916.

cence which I trust may not be regarded as too childish. But being drafted into this discussion, I prefer to be guided by my loyalty to this association rather than by any confidence that what I have to say will be of great service to my more mature colleagues.

In answer to the question put to us, "Is the division of entities present or involved in experience into the two reciprocally exclusive classes of the mental and physical to be retained?" I wish to maintain that while we must, by all means, keep the distinction between the mental and the physical, we must reject the view that they are mutually or reciprocally exclusive.

Two substances or classes, *A* and *B*, which are distinct, may bear to each other any one of four relations. First, *A* may be part of *B*; second, *B* may be part of *A*; third, *A* and *B* may be mutually exclusive; and fourth, *A* and *B* may be overlapping or intersecting. If *A* denotes the physical and *B* the mental realm, the first three views may be called, respectively, mentalism (subjective idealism), materialism, and dualism. For reasons which will be clearer later on, the fourth view may be called neutral monism.

1. IDEALISM (MENTALISM)

The thesis that all is mental, and that what we call physical is only a certain selected portion thereof, is a doctrine that few nowadays clearly and expressly maintain. But philosophies which explain everything as made up of a stuff called experience, and conceive experience as psychological or mental, lead to the same result. At any rate, this type of idealism is expressly found in systems as diverse as those of Fichte and Schopenhauer, and is indubitably implied by the language of Locke, Berkeley, and Hume. The great historic argument for it is Locke's assertion that "the mind hath no other immediate object but its own ideas." The metaphysical doctrine, then, that everything exists in the mind, finds support in the epistemologic doctrine that the mind can know only its own modifications. The latter doctrine, like most others which have been widely assumed as self-evident, has received astonishingly little evidence or proof in its favor. It has a certain verbal cogency so long as we do not distinguish between sensation or ideas as processes and as objects sensed or thought of. Since that distinction has been insisted upon by Mr. G. E. Moore, in his epoch-making paper on the "Refutation of Idealism," few have come out openly in defense of the proposition that the *esse* of things is their *percipi*.² Even writers who call themselves idealists, like A. E. Taylor, have pointed out that the doctrine that nothing can be known except by an idea of it involves a vicious infinite regress. If, on the other hand, ideas can be known

² *Mind*, Vol. 28, 1903.

directly, why can not things also be known directly? It is not, however, necessary to argue this doctrine. It is sufficient to point out that the proposition that all is mental, like other assertions about *all things* is futile. If everything is mental, no specific differentia are left for that which we ordinarily call our inner or mental life, our hopes, emotions, *etc.* By resolving physical objects into ideas, we are still left with a difference between ideas like spoons with which we eat, and ideas in our mind only.

In thus pointing out the scientific futility of monistic subjective idealism, I do not mean to deny its tremendous social and religious significance in the history of civilization. It offered a powerful support for the revolutionary individualism which broke the bonds of external authority in political and religious life. It destroyed the belief in the divine power of kings and priests. Above all, it offered a vital compensation to the emotional depression of the Copernican discovery that man's abode is not the center of the universe. "Your body," idealism said, "may be located on a tiny speck of dust, but the whole stellar system, after all, exists only in your mind." That doctrine, however, had no effect on the study of astronomy or on any other physical science. Indeed, in its phenomenalistic or sensational form, as represented by Mach, Ostwald, and Pearson, this monistic idealism would have proved a positive hindrance to progress in physics if it were not for the fortunate fact that it has had no influence on those engaged in physical research. For by insisting that physical objects are constituted by sensational elements only, these thinkers would expressly rule out such hypotheses as those relating to atoms, electrons, *etc.*, which have in recent years transformed physical science. It is true that there are serious dangers in multiplying hypothetical entities, which led the greatest of all physicists to say "*hypotheses non fingo*." Nevertheless, the fact remains that the hypothetical method as embodied in works of men like Farady, Kelvin, Boltzman, Maxwell, and J. J. Thompson has been an integral part of the life of physical science.

2. MATERIALISM

A similar logical or scientific futility attaches to materialism. It is not necessary to refute the resolution to call everything matter or body. We need only point out that the science of physics treats only of definite kinds of bodies, gases, solids, *etc.*, and excludes from these such entities as wishes, imaginings, beliefs, *etc.* If entities of the latter kind could enter the physical causal series, modern science would be impossible. It would be indistinguishable from witchcraft and magic.

3. EXCLUSIVE DUALISM

In our ordinary daily experience, the handling of spatial things is of such preponderant importance that there naturally arises a tendency to reification, to regard all objects of consideration as if they were mutually exclusive *things*. This tendency is reinforced by the philosopher's love of simplicity, since the relation of mutual exclusion is the simplest relation between two different classes. This is embodied in the ordinary phraseology in which the problem is stated, for example, "the external world," "the contents of the mind," and the use of the dangerous little word *in*. Now, it seems obvious that externality is a relation which we apply only to physical objects. One physical thing is external to another physical thing when they occupy different portions of space. In what sense, then, can the whole physical world be external to a mind which is by hypothesis not physical at all? It is not too much to assert that the whole modern epistemologic problem arises from the fact that, having conceived the mental and the physical as two mutually exclusive substances, it becomes difficult to express the simple fact that physical objects are knowable and that knowledge is an act of the mind. The epistemologic doctrine, according to which we know, not objects directly, but only copies of them in the mind, is but a device whereby the hard and fast Cartesian dualism may be maintained, by preventing the physical world itself from entering into the mind. All our modern classical doctrines of sensations, images, *etc.*, are but steps in this construction. I am not competent to pass any judgment on the recent psychological controversy as to whether we do or do not have sensations or images. But even if we do have sensations that are not simply qualities of physical objects, and even if we never think without having images, it still seems to me demonstrably certain that we do know objects other than these sensations and images. When I know the binomial theorem, Occam's razor, the periodic law, the history of the Chinese political system, the fact that Poland is starving, or the supposed truth that nothing can be known except by experience, I may or may not have images of various kinds before the mind. But the objects known are not the images present, but things not sensibly present at all. Indeed, does not the dogma that nothing can be known except by an idea, sensation, or image of it, *presuppose* that we do know things of which there are sensations, images, or copies? Let us examine carefully the usual arguments for the dualistic position.

1. Ever since Hobbes, the existence of sense organs has been used as an argument that we perceive not the objects, but their phantasms, matter assumes that objects can be known as existing at a time different in time and space from the objects known. This account of the matter assumes that objects can be known as existing at a time differ-

ent from the time of perception; but if this is admitted, the argument for the existence of images, ideas, or perceptual doubles of *all* things known is not at all necessary. We need only admit that we may make a false judgment as to the time position of certain objects, and that further knowledge may lead us to correct that judgment. This would mean that there is no ultimate dualism between objects known and objects perceived, but that in actual concrete perception there is a judgment element which may or may not be compatible with other judgments.

2. The view that erroneous physical objects have their seat in the mind only, seems to me to have been made the object of unanswerable objections by writers as different as Professors Sheldon and Holt. Briefly, the point is that what makes us judge an object or quality erroneous is incompatibility with other objects or qualities regarded as veridical. But such incompatibility exists only between objects in the same known universe. Forms such as round and square are incompatible, but not round and heavy. If veridical objects existed in the physical realm and erroneous objects in the mental realm, and the two realms were exclusive, there could be no explanation of error.

3. Another mode in which the world is cut into a physical and a mental half is by assigning primary qualities to the former and secondary qualities to the latter. But the arguments by which this division has been supported since the days of Locke and Berkeley seem to me all indefensible. The argument is that since the same object appears hot to one hand and cold to another, the heat and cold can not be qualities of the object, but must reside only in the mind. This is a *non sequitur*. *Prima facie*, it could prove only that the heat of the object depends on the hand or physical sense-organ, and not on the mind. In point of fact, physics explains the variations of secondary qualities not by reference to mind, but by taking into account the physical structure of the medium and sense-organ. Such variations are duplicated in physical instruments such as thermometers, cameras, *etc.* Nor is it true that this relativity is characteristic only of secondary qualities. It is also true of primary qualities such as the weight of the body, its velocity, and even some of its geometric properties, such as its projections, *etc.* Indeed, there are few things on which physics is so certain as that the properties of physical objects depend on the system of objects in which they are placed. What qualities are to be regarded as primary is simply a problem of logical economy, as to what is the smallest number that must be assumed such that all other properties can be derived from them.

In general, if we remember that physical objects are knowable and that mental events take place under determinate physical condi-

tions, it is difficult to see how one can maintain that "the antithesis between the mental and the physical is the most absolute antithesis within the realm of being."³ Again, if we maintain that things are not the direct objects of knowledge, and that what we know directly are percepts, images, and copies of things, then we have the hitherto unanswered question, what evidence do we have that these images, *etc.*, are perfect copies? Direct comparison between things and our images would seem to be out of the question. It seems also that physical things have a more continuous existence than our intermittent ideas of them. Moreover, if we hold with Professor Pratt that spatial characteristics are in the mind, does it not follow that space itself must be in the mind, and if so, what becomes of our rigid dualism? There seems to me no escape from the logical fact that if we divide the total universe into two mutually exclusive classes or substances, one of these will have to be defined in purely negative terms; and all negative classes are essentially indefinite.

4. NEUTRAL MONISM⁴

This view is not so much a solution to the problem how the mental and the physical are to be distinguished, as a doctrine how the question must be put, in order to make the answer significant. It insists that every system, physical or mental, is but a class or selection of neutral entities, and therefore can be defined only by the character of the fundamental principles or postulates of the system. The physical system is thus simply the class of entities to which our fundamental physical laws are applicable, and the psychological or mental system is the class of entities that meet certain other requirements, such as the capacity for specific response or what not. Such classes need not be mutually exclusive, and their precise interrelation must be the object of specific detailed study. Thus the whole physical system as an object known may be a single term in a mental series, while the mental series itself may be attributed to a particular physical organism in time and space.

The question, how can the same entity be both in space and in consciousness, can be readily answered if we remember that the same thing can be in a number of different classes which are not mutually exclusive. A man may be in this room, in our association, and in a state of weariness, just as a man may be both a bankrupt and the author of a number of books on how to succeed in life.

The assertion that the mental and the physical are complexes of neutral entities may suggest the question, where and when do these neutral entities exist, if not in the mind or in physical space? The

³ Professor Pratt, this JOURNAL, Vol. XIII., p. 687.

⁴ This point of view may as well be called pluralism.

answer is that anything may be said to exist in a given universe of discourse if it can be shown that it occupies a position therein. Thus Hamlet's melancholy and reflective character exists in Shakespeare's play, and the roots of equations exist in the number system. For in each case the particular entity can be shown to be demanded by the character of the system and of the other entities in it. So far as logic is applicable to both physics and psychology, neutral logical entities may be said to be parts both of the mental and of the physical series. But in so far as logic is distinguished from physics and psychology, the system of logical entities exists just as truly as the mental or physical systems exist. In our daily routine problems as to existence in the physical system are of tremendous concern, but there is no evidence for the view that existence in the physical or mental system is in any way logically superior to that in the purely logical or other system. This may seem to degrade the term existence, and perhaps it does. But I believe that few habits would be more useful to philosophy than the habit of refusing to discuss whether certain entities exist, unless we ask exist how? or in what kind of a system?

As one looks over the recent literature of the mind-body controversy one can not escape the feeling of the fruitlessness of it all. No important issues seem to grow out of or to depend on the different answers given to these problems. Hence there are to-day a growing number of thinkers who feel that the wisest course is to turn one's back on the whole business and face instead some of the more fruitful problems of philosophy which have been neglected for the sake of the epistemologic adventure. But if such turning one's back on that which our fellow-workers regard as so important is not to be a mere manifestation of the wisdom of the ostrich, we must make certain that we have really eliminated the epistemologic difficulty *as an initial problem*. For woe be unto us if its protean ghost continues to haunt us! A sound epistemology can, therefore, certainly be useful in saving us a lot of wasted effort and freeing our energies for genuinely fruitful problems.

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DR. WATSON AND THE CONCEPT OF MENTAL DISEASE

DR. WATSON'S contribution to the discussion of *Behavior and the Concept of Mental Disease*¹ is of such paramount importance and touches upon so many points of mutual interest for the psychologist and psychiatrist that I am tempted to ask for some

¹ This JOURNAL, Vol. XIII., p. 589.